Research Square

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Quality of Life and Mental Health in Iranian Transgender Women: Socio-Demographic Differences

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Research

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Abstract

Background: Mental health issues and quality of life are among the important items of the general health in all people, and especially in transgender people. The present study aimed to assess the quality of life, depression, anxiety, and stress in transgender women and determine the factors contributing to them.

Methods: A cross-sectional study on 127 Iranian transgender women was performed from August 2019 to April 2020 using a convenience sampling method. The quality of life (QOL) was determined by using the WHO questionnaire (WHOQOL-BREF). The DASS-21 questionnaire was employed to evaluate the anxiety, depression, and stress in the subjects.

Results: 48% of the individuals had a moderate QOL. The highest score achieved in the physical health dimension, and the lowest score in the social relationships dimension. Depression, anxiety, and stress were severe and extremely severe in 22%, 20.4%, and 17.3% of the subjects. A significant relationship was observed between the overall perception of QOL and depression, anxiety, and stress ($p < 0.001$).

A significant positive association between the subscales of QOL and education and favorable economic status were observed among transgender women. Also, a significant negative correlation existed between the subscales of QOL with age and sexual violence. Regarding mental health, education had a significant relationship with reduced stress and anxiety, and favorable economic status had a significant relationship with reduced depression, while sexual violence was associated with increased stress in the individuals.

Conclusion: The study results show that change in some modifiable variables such as education can improve transgender women's quality of life and mental health by improving economic status. Moreover, there is also a strong need for developing sexual violence prevention services regarding its considerable effects on mental health and quality of life.

Plain English Summary

Transgender people refer to persons whose identity and gender is different from their birth-assigned sex. These individuals may receive mistreatments in society and face discrimination in their life events. Assessing the QOL and mental health status of transgender people would be an important step to inform society of the problems and discriminations these people encounter. Besides, determining the factors affecting the quality of life (QOL) and mental health would facilitate determining appropriate clinical interventions. In the present paper, we assessed the quality of life, depression, anxiety, and stress in transgender women and determine the factors contributing to them. A cross-sectional study on 127 Iranian transgender women showed that 48% of the individuals had a moderate QOL. The highest score achieved in the physical health dimension, and the lowest score in the social relationships dimension. Depression, anxiety, and stress were sever and extremely severe in 22%, 20.4%, and 17.3% of the subjects. A significant relationship was observed between the overall perception of QOL and depression, anxiety, and stress ($p < 0.001$). Our results showed that change in some modifiable variables such as education can improve transgender women's quality of life and mental health by improving economic status. Moreover, there is also a strong need for developing sexual violence prevention services regarding its considerable effects on mental health and quality of life.

Introduction

Transgender people refer to persons whose identity and gender is different from their birth-assigned sex [1]. These individuals may receive mistreatments in society and face discrimination in their life events. Many of these people are victims of different types of childhood abuse. Of course, any of these issues can produce harmful outcomes in their lives and the quality of life (QOL) [2]. A meta-analysis represents a lower QOL and the associated mental health in transgender individuals compared with other people. However, existing evidence suggests that gender reassignment surgery could improve the QOL for transgender people [3].

Depression is a serious mental disorder that both disturbs individuals' health and QOL and imposes a burden on their families and society [4]. A US study found that 62% of transgender women displayed depression [5], which seems to be considerably higher than the US general population (16.6%) [6]. Research reveals approximately half of the young transgender people (43.8%) in China were at the risk of major depression, and more than one-third (37.4%) in this population was at the risk of anxiety disorders [7]. Previous studies have suggested that there is an association between depression and substance abuse, high-risk sexual behaviors, and suicide [8–10]. It is, therefore, necessary to determine the prevalence of depression and the contributing factors in transgender people.

Transgender people are also at risk for various social stresses, such as stigma, discrimination, and bias events, which contribute to the likelihood that these people experience mental health problems [11]. Among transgender persons, the risk of developing anxiety disorders is three times that of the general population. There is evidence that the prevalence of anxiety disorders was much higher in transgender women (40.4%) and transgender men (47.5%) than in the general population [12].

Assessing the QOL and mental health status of transgender people would be an important step to inform society of the problems and discriminations these people encounter. Besides, determining the factors affecting the QOL and mental health would facilitate determining appropriate clinical interventions. In preparing the current research, a larger study on the reproductive and sexual health needs of transgender women was conducted. The present article assessed the quality of life, depression, anxiety, and stress, as well as the contributing factors in transgender women.

Setting

Between 1987–2017, the number of Iranian transgender people referred to the relevant organizations was 3,600, of which 1,933 were transgender women, and 1,667 were transgender men [13]. Although gender reassignment surgery has been approved as part of treatment in Iran since 1985 [14], transgender people still face numerous problems due to social stigma and insufficient family support, which has affected their general health and quality of life.

Methods

This is a cross-sectional study in the cities of Tehran and Shiraz, which was conducted after obtaining a research ethics license from Tehran University of Medical Sciences under the ethic codes of IR.TUMS.FNM.REC.1398.052 on 24th June 2019.

Sampling

185 transgender people from “Tehran Transgender Support Center” and “Shiraz Forensic Medicine” were recruited by convenient sampling. All participants had a patient record at both places. Telephone calls were made to each subject; of which forty-five did not respond, five did not want to participate, and eight did not meet the inclusion criteria. Eventually, a total of 127 transgender females (112 from Tehran and 15 from Shiraz) participated in the study. A written consent was obtained from eligible individuals who were willing to participate in the study after explaining the research objectives. All the questionnaires were completed at the centers and in the presence of two experts in the research subject. Inclusion criteria for transgender women were having a patient record at the two centers and having undergone the treatment, either hormonal or surgical treatment.

Research tools

In this study, a demographic properties questionnaire, the WHOQOL-BREF questionnaire, and the DASS-21 questionnaire were used. The demographic questionnaire consisted of nine questions about age, marital status, education, employment status, economic status, vaginoplasty, family support, physical violence experience, and sexual violence in a transgender person. WHOQOL-BREF is a standard 26-item questionnaire that uses a 5-point Likert scale for each item and evaluates four dimensions, including physical health (seven questions with a score in the range of 7 to 35), psychological health (six questions with a score in the range of 6 to 30), social relationship (three questions with a score in the range of 3 to 15), and environment (eight questions with a score in the range of 8 to 40). After calculating the raw score across four dimensions, the score of each dimension is converted to a score in the 0 to 100 range to become comparable with the WHOQOL-100 questionnaire. Moreover, two questions are separately evaluated in this questionnaire; question 1 regarding the overall perception of the quality of life (OQOL) (in the range of 1 to 5) and question 2 regarding the overall perception of health (Ohealth) (in the range of 1 to 5). A higher score indicates a person's better health status and QOL [15]. An evaluation of validity and reliability of this questionnaire has been performed for the Iranian people, and Cronbach's alpha for four dimensions of physical health, psychological health, social relationship, and environment have been reported 0.81, 0.78, 0.82, and 0.80, respectively, which are satisfactory. The interclass correlation coefficient (ICC) for each dimension of quality of life was more than 0.7 [16].

DASS-21 questionnaire has 21 questions regarding three dimensions: depression, anxiety, and stress. Each dimension has seven questions with a score in the range of 0 to 21, and the answers are on a 4-point Likert scale in the range of 0 to 3. Since the questionnaires are the summarized version of the original 42-question scale, the severity of each subscale must be determined using the following classification, and after doubling the score of each subscale.

Depression subscale: 0–9: normal, 10–13: mild, 14–20: moderate, 21–27: severe, and 28 and above: extremely severe. Anxiety subscale: 0–7: normal, 8–9: mild, 10–14: moderate, 15–19: severe, and 20 and above: extremely severe. Stress subscale: 0–14: normal, 15–18: mild, 19–25: moderate, 26–33: severe, and 34 and above: extremely severe.The validity and reliability of this tool has been performed for the Iranian population, and internal consistency coefficient of depression, anxiety, and stress were 0.93, 0.90, and 0.92, respectively, and the interclass correlation coefficient (ICC) between the two times with a 3-week interval was measured 0.78, 0.87, and 0.80 [17].

Statistical Analysis

Normality of continuous variables was checked by Shapiro-Wilk test. Data with normal distribution were expressed as mean ± SD, while skewed variables were expressed as median and interquartile range. Categorical variable was expressed as no (%).

The relation between different domains of quality of life (physical health, psychological health, social relationship, and environment), anxiety, depression and stress with socio-demographic variables (age, education, occupation, vaginoplasty, family support, and violence) were evaluated by means of liner regression analysis; since the distribution of responses were skewed the outcome of interest were log-transformed and the coefficients were interpreted as the exponential of the estimated one. Variable selection was conducted via best subset selection according to AIC criterion, so each regression equation was finally built via specific set of variables. Goodness of fit of linear regression was checked through normality of residuals, multicollinearity of variables, detecting outliers and leverages.

Correlation between depression, anxiety, and stress with overall perception of the quality of life (OQOL) was evaluated by Kruskal-Wallis H test. To overcome sparsity of data, the good and very good participants were merged as good, and also poor and very poor participants were merged into poor group. All statistical analyses were performed with STATA Statistical Software Release 15.0 (StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC.). P-values < 0.05 were considered as statistically significant.

Results

The mean age of 127 participants was 27.6 ± 7.3. Among the subjects, 62.2% were unemployed, 92.1% were single, 77.2% had a high school diploma, and most of them (56.7%) had poor economic status, 74% had not undergone vaginoplasty, 63% had low family support, 70.9% had experienced physical violence, and 63% had experienced sexual violence (Table 1).

Table 1
Baseline Characteristics of Study Participants

	Number (%)
Age groups	
<25	61 (48(
26–34	42 (33.1)
≥ 35	24 (18.9)
Education	
Primary/ secondary	22 (17.3)
High School	98 (77.2)
Under/post graduate	7 (5.5)
Occupation	
Unemployed	79 (62.2)
Public sector	8 (6.3)
Private sector	40 (31.5)
Economic status	
Poor	72 (56.7)
Good	53 (43.3)
Marital Status	
Single	117 (92.1)
Married	5 (3.9)
Divorced	4 (3.1)
In a relationship	1 (0.8)
Vaginoplasty(yes)	33(26)
Family support	
High	12 (9.4)
Moderate	35 (27.6)
Low	80 (63)
Experience of Physical Violence(yes)	90 (70.9)
Experience of Sexual Violence(yes)	80 (63)

The quality of life and mental health of study participants are shown in Table 2. Regarding the quality of life after converting the score of all dimensions to a 0-100 scale, the average score in physical health was 53.9 ± 16.3, in psychological health 46 ± 17.8, in social relationship 39.2 ± 22.9, and environment 48.7 ± 16.9. Also, the mean score for OQOL was 3 ± 1 and 3.1 ± 0.9 for Ohealth, and 48% of the subjects reported OQOL, and 51.2% reported Ohealth as the medium.

Table 2
Distribution of Main Outcomes of Interest

	N = 127
Continuous Scale (Mean ± sd)	
Quality of Life	
Physical Health	53.9 ± 16.3
Psychological health	46 ± 17.8
Social relationship	39.2 ± 22.9
Environment	48.7 ± 16.9
OQOL	3 ± 1
Ohealth	3.1 ± 0.9
Depression	12 ± 12.2
Anxiety	8.3 ± 10.6
Stress	13.5 ± 11.7
Categorical Scale (No %)	
OQOL	
Very poor	13 (10.2)
Poor	14 (11)
Neither poor nor good	61 (48)
Good	35 (27.6)
Very good	4 (3.1)
Ohealth	
Completely dissatisfied	5 (3.9)
Dissatisfied	21(16.5)
Not satisfied nor dissatisfied	65 (51.2)
Satisfied	29 (22.8)
Very satisfied	7 (5.5)
Depression	
Normal	71 (55.9)
Mild	10 (7.9)
Moderate	18 (14.2)

	N = 127
Severe	8 (6.3)
Extremely Severe	20 (15.7
Anxiety	
Normal	80 (63)
Mild	5 (3.9)
Moderate	16 (12.6)
Severe	5 (3.9)
Extremely Severe	21(16.5
Stress	
Normal	83 (65.4)
Mild	7 (5.5)
Moderate	15 (11.8)
Severe	9 (7.1)
Extremely Severe	13 (10.2)

The mean and SD of mental health score were 12 ± 12.2 for depression, 8.3 ± 10.6 for anxiety and 13.5 ± 11.7 for stress. According to the standard questionnaire categorization, the mean score of depression and anxiety of participants was mild, and their stress level was normal. The majority of people did not report any depression (55.9%), anxiety (63%), and stress (65.4%). Depression, anxiety, and stress were severe and extremely severe in 22%, 20.4%, and 17.3% of the subjects (Table 2).

A significant relationship was found between OQOL and depression, anxiety, and stress ($p < 0.001$). Participants with better OQOl had experienced lower levels of depression, anxiety, and stress (Table 3).

Table 3
Association between OQOL and Depression, Anxiety, and Stress.

OQOL variables	Very poor/poor	Neither poor nor good	Good/ very good	p-value
Stress	20(10, 34)*	10(5,19)	6(2,14)	< 0.001**
Anxiety	14(2, 28)	2(0,11)	2(0,6)	< 0.001**
Depression	22(8,38)	8(3,16)	4(0,10)	< 0.001**

*Median (IQR); **P-values < 0.05

The relationship between the dimensions of quality of life (physical health, psychological health, environment, and Social relationship) with demographic variables is reported in Table 4 through linear regression analysis. A significant positive association was observed between education with physical health (Beta = 1.02, $p < 0.04$) and environment (Beta = 1.04, $p < 0.001$), and economic status with physical health (Beta = 1.16, $p < 0.01$), psychological health (Beta = 1.25, $p < 0.007$), and environment (Beta = 1.28, $p < 0.000$). Each year, the increase in education was accompanied by a 2% increase in the physical health dimension and a 4% increase in the environment dimension, and the favorable economic situation was accompanied by a 16% increase in physical health, 25% in psychological health, and 28% in the environment. Contrary to expectations, physical violence was associated with a 53% improvement in the social relationship score (Table 4).

Table 4
Association between domains of quality of life and some socio-demographic factors.

Variables	**Physical Health**		**Psychological health**		**Social relationship**		**Environment**	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Age					0.98	0.04*		
Economic poor								
Good	1.16	0.01*	1,25	0.007*	1.23	0.15	1.28	0.000*
Education	1.02	0.04*	1.02	0.09			1.04	0.001*
Physical violence No								
Yes	0.88	0.06			1.53	0.006*	0.88	0.10
Sexual violence No								
Yes			0.82	0.02*				
Vaginoplasty No								
Yes					1.33	0.08		
Family support High								
Moderate					0.86	0.56		
Low					0.63	0.07		
*P-values < 0.05								

There was also a significant negative association between age and social relationship (Beta = 0.98, $p < 0.04$) and sexual violence with psychological health dimensions (Beta = 0.82, $p < 0.02$). each one year increase in the person's age, the social relationship dimension score decreased by 2%, and the experience of sexual violence was accompanied by an 18% decrease in the psychological health dimension score (Table 4).

The association of depression, anxiety, and stress with demographic variables is given in Table 5. Education was correlated with reduced stress (Beta = 0.92, $p < 0.009$) and anxiety (Beta = 0.94, $p < 0.02$), and an association was observed between favorable economic status and reduced depression (Beta = 0.63, $p < 0.008$). Per one level of increase in education, a 6% reduction in anxiety levels, and an 8% reduction in stress levels was observed. A favorable economic situation was associated with a 37% reduction in depression. Contrary to expectations, in transgender people who reported moderate or low family support, stress was 50% (Beta = 0.50, $p < 0.02$) and 48% (Beta = 0.52, $p < 0.01$) less than those who reported high family support. The experience of sexual violence was associated with a 49% increase in individual stress ($p < 0.01$) (Table 5).

Table 5
Association between depression, anxiety and stress with some socio-demographic variables

Variables	Depression		Anxiety		Stress	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Economic status poor						
Good	0.63	0.008*	0.81	0.14		
Education (years)	0.95	0.08	0.94	0.02*	0.92	0.009*
Sexual Violence No						
Yes					1.49	0.01*
Family support High						
Moderate					0.50	0.02*
Low					0.52	0.01*
*P-values < 0.05						

Discussion

This study assessed the quality of life, depression, anxiety, stress, and contributing factors in transgender women.

Considering the quality of life, our results showed that 48% of transgender people reported OQOL as moderate. This finding could be interpreted with a significant positive relationship between education and economic status with subscales of quality of life. Considering that the majority of people in the present study did not have appropriate education, economic status, and profession, it seems that these factors could have an inverse effect on physical health, psychological health, environment, and ultimately, OQOL. Other studies have shown that there is a significant relationship between the QOL of transgender women and their education, profession, income, and psychological stability [18], income and QOL [19], and income and education with QOL [2, 20]. It seems that higher education is perceived as an enabling factor for women, leading to an appropriate profession and higher income and improved QOL.

Considering the QOL dimensions, the highest mean belonged to physical health (53.9%). The higher score in physical health could be explained by the age average of 27 of the subjects and the fact that the majority of

them (74%) had not undergone gender reassignment surgery. In other studies, the highest QOL belonged to the transgender people's physical function [21], who sometimes had a higher score than the general population [22, 23]. However, the highest QOL in transgender people was reported in the environment in two studies [2, 24], which could be attributed to the higher employment and income of the transgender people in that study compared to ours. In the present study, the lowest quality of life belonged to social relationships (39.2), which needs attention. The majority of the transgender people in this study (63%) had low family support. It seems that the lack of family support and social stigma could lead to social deprivation and the limited relationship of these people with others. Low social relationship scores are observed in the two other studies (2, 24). The QOL of the participants in the social relationship dimension in this study decreased with age, which is not far from expectation considering the higher connection of younger transgender people with social media.

The results of Table 3 showed that the OQOL of transgender people has a significant relationship with their depression, anxiety, and stress, which is consistent with Gorin's study [25]. Of course, paying attention to the mental health of transgender people could significantly improve their QOL.

Considering mental health, although the mean score of depression in the transgender women shows mild depression, 22% had severe and extremely severe depression, which deserves attention. Considering the considerable effects of economic status in alleviating depression (37%), it is very important to pay attention to the living and financial needs of these people, which is consistent with other studies. [26, 27].

Considering anxiety, although the mean score of anxiety was mild in transgender women, 20% had severe and extremely severe anxiety. Moreover, improved education was associated with decreased anxiety in them. Improved education will lead to better social status for transgender people and decrease their worries by creating self-confidence. The results of other studies show the positive effects of education on mental health [28, 29].

In the stress dimension, although the mean score of stress was normal in transgender women, 17.3% of them had severe and extremely severe stress. Although education is a contributing factor to stress, sexual violence was associated with a considerable increase in stress scores (49%). The high rate of sexual violence in this study (63%) and its relationship with stress show that these people are exceptionally mentally vulnerable and should be well attended to counseling, support groups, and health promotion programs. The results of two other studies also confirm the association between sexual violence and mental health disorders in transgender people [30, 31].

Contrary to our expectation, this study showed that those who had lower family support had lower stress compared with those with higher family support. However, it should be regarded that this finding in our study should be cautiously interpreted due to the level of significance ($p < 0.05$), the very small number of people with high family support (9.4%), and the fact that the results of other studies that are contrary to the present study [32–35]. The only interpretation that may partially explain this issue may be that the high support of a family can lead to incompatibility and stress in individuals when there are many problems for transgender people in society.

One of the limitations of this study is the lack of a control group from the general population to compare the outcomes with those of transgender people. Nevertheless, the present study is of the first studies in Iran that

have assessed the quality of life, depression, anxiety, stress, the contributing factors, and the relationship of these factors which each other and with the demographic variables, in such considerable size.

Conclusion

The results of this study emphasize that transgender women are at risk of mental health disorders, including depression, anxiety, and stress, and these disorders are in close association with the quality of life in these people. The analysis of demographic variables showed that education, and especially economic status has a considerable effect on mental health and, consequently, quality of life in transgender people. Therefore, paying attention to enabling transgender women in education and creating appropriate job opportunities could indirectly lead to a higher quality of life and mental health by improving their economic status. Moreover, considering the high sexual violence in transgender women of the present study and its considerable effects on mental health disorders, there is a strong need to develop violence prevention services in the community and legislate legal protections in this area. However, future studies should still look for protective or resilience factors against violence and mental health problems and reinforce interventional studies that strengthen the existing community strengths for improving the health and well-being of transgender people.

Aabbreviations

Quality of life (QOL)

Overall perception of the quality of life (OQOL)

Overall perception of health (Ohealth)

Declarations

Ethics approval and consent to participate

Ethic approval obtained from Tehran University of Medical Sciences with Ethics number of IR.TUMS.FNM.REC.1398.052 on 24th June 2019. A written consent was obtained from participants.

Consent for publication

Not applicable

Availability of data and materials

The data are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors’ contributions

Conception and design, acquisition of data, analysis and interpretation of data, drafting the article and final approve have been done Farnaz Farnam; Safoora Gharibzadeh; Azar Nematollahi.

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